

Memorandum

Date : August 1, 1994

To : John Siperek Gary Stacey
Terry Mills

From : Koll Buer
Senior Engineering Geologist
Department of Water Resources

Subject: Use of Alternative Gravel Sources for Fishery Restoration and Riparian Habitat Enhancement in Shasta and Tehama Counties, California

The following report discusses the result of a one-year study of aggregate resources, regulations and riparian-wetland gravel mine reclamation in Shasta and Tehama Counties. The Department of Conservation, Office of Mine Reclamation records show that 1.53 million tons of gravel were harvested in Shasta and Tehama Counties in 1992. We reviewed county permits and Department of Fish and Game 1603 permits and found that a maximum of 4 million tons of aggregate may be extracted in 1994. The actual quantity extracted will depend on local economic conditions. About 60 percent of the gravel is harvested from instream mines, with the balance from offstream mines.

The Sacramento River and many of the tributary streams have been impacted by instream mining. The more heavily impacted streams include Clear, Cottonwood, Cow, Dibble, Thomes, and Stony Creeks.

There are large offstream aggregate deposits in Tehama and Shasta County. Offstream aggregate deposits generally cost more to mine and process. However, the deposits can generally be mined year-round, generally have fewer environmental concerns, generally require less environmental documentation and generally require fewer permits. We believe that instream mining will gradually reduce because of resource depletion, damage to structures, and environmental problems. Offstream mines reclaimed to wetland-riparian habitat present a rare opportunity to increase the amount of this critical resource.

DWR-ND compiled information on aggregate deposits, mine locations, types of aggregate mining, gravel mining regulations, gravel pit reclamation, and other relevant topics. We recommended a number of projects for the Department of Fish and Game to consider for salmon spawning gravel supply and wetland-riparian gravel pit reclamation.

We recommend that DFG consider a demonstration gravel mining and wetland-riparian reclamation project in Shasta or Tehama County. The project would consist of mining offstream aggregate for salmon spawning gravel. The gravel would be placed in the Sacramento River below Shasta Dam to replace gravel mined from tributaries or trapped in

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the reservoir. The gravel pit should be reclaimed to wetland-riparian habitat and used to demonstrate reclamation strategies.

There will be a large increase in offstream gravel mining in the near future. Minimal reclamation information is available and most reclamation plans are incomplete and ill-conceived. Gravel miners will have numerous choices for reclamation strategies and end-uses. We believe there is a real need for wetland-riparian habitat reclamation to increase the amount of this threatened resource. Gravel miners should be shown the advantages of wetland-riparian habitat gravel pit reclamation and be encouraged by financial and regulatory assistance.

This report is forwarded to you as a draft memorandum. If you wish to publish all or part of this report for general distribution, we will assist you in any way we can. Koll Buer, Senior Engineering Geologist, Elizabeth Cockrill, and Kevin Weherly, Graduate Student Assistants, wrote the report with assistance from Larry Bettes II and Margie Graham, Student Assistants. Dave Bogener and Joyce Lacey, Environmental Specialist IVs, provided valuable assistance in compiling and identifying wetland-riparian species. Report preparation included assistance from June Daniels, Sharon Helfrich and Joanne Ehorn.